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Attempts to Infect Aëdes Aegypti (Stegomyia Fasciata) of West Africa with Leptospira Icteroides by Feeding on Infected Guinea Pigs and on Culture Suspensions

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Summary

The experiments outlined above were carried out with a twofold purpose. The first was to determine whether the West African *Aëdes aegypti (argenteus)* will transmit *Leptospira icteroides* from one infected guinea pig to another. If West African yellow fever is the same as that of South America, then the stegomyia ought to transmit the infection. The other object was to elucidate the cycle of development of *Leptospira icteroides* as the stegomyia. If the stegomyia is the intermediate host of the leptospira then there ought to be a progressive development of the organism in the mosquito. Neither of these purposes was achieved. Whenever the leptospira were ingested by the mosquito by feeding on infected guinea-pigs or on culture suspensions, they were apparently incapable of establishing themselves in the body of the mosquito. In the artificial feeding on cultures, the leptospiras remained active in the gut of the mosquito for ten to twelve hours, but sixteen hours or more after feeding, no traces of them were found by a careful search under the dark-field microscope. There was definite indication that even during the first ten or twelve hours the leptospiras gradually died. The proportion of dead to living organisms increased progressively with the time interval after feeding.

The uniformly negative character of the experiments recorded above is surprising. Noguchi (1) succeeded in infecting stegomyias by feeding on man and in transmitting *leptospira icteroides* infection from one guinea pig to another by this mosquito. In one instance, he domonstrated the presence of small numbers of leptospiras in ground up mosquitoes which had fed some time previously on an infected guinea-pig. The technique used in the experiments reported above did not differ essentially from that employed by Noguchi, except that the experiments on feeding on guinea-pigs were supplemented by those on feeding on culture suspensions. It is possible, of course, that there may be some slight biological differences in the stegomyias from different regions and that the leptospira may be able to maintain itself in the mosquito in one place and fail to do so in another. It is more probable, however, that occasionally some organisms may survive in the mosquito and, if the strain is more highly virulent, that number may suffice to produce infection. The problem raised is of sufficient interest and importance to warrant a more thorough investigation.

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